

Shaping society 5.0 Building trust in AI as a force for good

AI can be a force for good
in healthcare

Foreword



**By Harold Pradal,
Chief Commercial Officer, BSI**

2023 will be viewed as the point that Artificial Intelligence (AI) tipped into the mainstream, with a 286% rise in media coverage of the topic¹. And whilst headlines were grabbed by ChatGPT, the real AI story is much, much deeper.

This transformational technology is accelerating progress – and has the potential to go further as a force for good and move us towards Society 5.0, a ‘human-centered society that balances economic and technological advancement to solve society’s problems’². Importantly, it also raises questions around how we build trust in AI and what guardrails are needed to ensure AI shapes our future in a positive way.

In this collection we go behind the headlines to explore the real-world impact of AI through the eyes of BSI experts, drawing on the views of 10,000 people in nine countries. For anyone in doubt, AI is here and it’s here to stay – 38% of people use AI in their jobs daily, rising to 70% in China and 64% in India. By 2030, 62% expect their industry will use AI³.

At BSI we are committed to shaping the impact of technology and innovation for the benefit of individuals, organizations and society. AI sits at the heart of this because it has the potential to be a powerful partner, changing lives and accelerating progress towards a better future and a sustainable world.

We commissioned these essays to turn the spotlight on this generational opportunity – recognizing that the better we understand it, the better we can harness its power. Whether it’s creating new workplace opportunities, improving patient outcomes, tackling modern slavery or building a safe global food system, AI has a pivotal role to play.

We examine the importance of embedding digital trust in AI, the critical role for collaboration – between nations, policymakers, organizations and individuals – to unlock AI’s true potential, and the fast-evolving regulation designed to ensure consistency and certainty.

With AI crossing over from small, contained environments into mainstream technology at work and at home, this offers a transformational opportunity to unlock a multitude of benefits – provided trust and confidence are present too.

AI is just getting started. At BSI we are excited to partner with our clients as we embark on this journey. We are delighted to present these essays to explore the enormous potential AI offers to shape Society 5.0 and deliver a sustainable future powered by innovation.

1. Signal search analysis 2022-2023.
2. Society 5.0: The Fundamental Concept Of A Human-Centered Society, Open Business Council, Aug 2023
3. BSI Trust in AI Poll 2023



AI can be a force for good in healthcare

As a purpose-driven organization, BSI believes AI can be a force for good, changing lives, making a positive impact on society and accelerating progress towards a sustainable world. In this essay, Jeanne Greathouse, Healthcare Director, looks at how AI can be used to improve outcomes for patients and relieve pressure on healthcare professionals around the world.





By Jeanne Greathouse

Healthcare Director, BSI

The last few years have been challenging for those working in healthcare. In many countries, services were already under pressure before the Covid-19 pandemic hit, due to rising patient numbers, an ageing population and complex disease profiles¹. In 2021, the World Health Organization (WHO) found that around 90% of countries were still reporting some form of disruption to health services² – and this remained at 84% by May 2023³.

So, as the global conversation around the uses and benefits of AI heats up, it is not surprising that according to BSI's Trust in AI Poll, 56% of people around the world support the use of AI tools to diagnose or treat them or a loved one if it could improve their condition or speed up their recovery⁴. Addressing backlogs, alleviating workforce pressures and finding new ways to diagnose and treat complex illnesses could bring enormous societal benefits, helping people live healthier lives around the world.

- Already, AI is starting to break ground in ways that could bring benefits from saving doctors' time to improving patients' quality of life.
- One in two people say they are excited about the potential for AI to improve the accuracy of a diagnosis or speed up recovery times – and they are right to be optimistic as AI could be transformational for healthcare.
- To realize the benefits presented by AI in healthcare, there is work to be done to build trust amongst patients and clinicians.



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Utilizing AI in healthcare

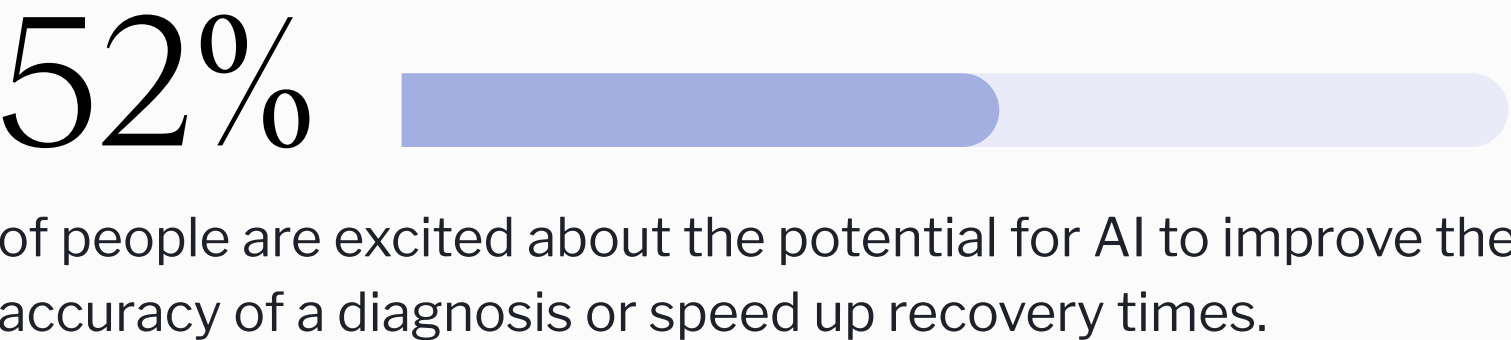
AI is already being talked about as part of the future of healthcare, with the global healthcare AI market projected⁵ to grow from \$14.6bn in 2023 to \$102.7bn by 2028. In our research, 29% of healthcare professionals globally said they use AI in their work already on a daily basis – and of those who don’t yet, two fifths (39%) expect it to be part of their work by 2030.

Already, AI is starting to break ground in ways that could bring benefits from saving doctors’ time⁶ to improving patients’ quality of life⁷. Digging into the details, here are seven areas in which AI is, or has the potential to be transformative in the healthcare sector.

1. Prediction and prevention

One in two people in BSI’s poll say they are excited about the potential for AI to improve the accuracy of a diagnosis or speed up recovery times – and they are right to be optimistic in this way. AI uses algorithms to recognize patterns in data and derives conclusions from them. Human cognition is analyzed by such software to determine the connection between different types of treatments and medical outcomes. By considering medical records and data analysis, AI aims to predict and prevent diseases, which could help prevent misdiagnosis as well⁸.

It’s still early days, but we are already seeing evidence that AI can predict and diagnose diseases faster than medical professionals. One early study⁹ found that an AI model using algorithms and deep learning had a better accuracy rate than 11 pathologists at detecting breast cancer.



39% of healthcare professionals expect to use AI in their work by 2030

Jeanne Greathouse





2. Efficient medicine development

The use of artificial intelligence is already starting to revolutionize medical research and each stage of drug development. According to the World Economic Forum (WEF)¹⁰, the largest ten pharmaceutical companies have either partnered with or acquired AI companies to make use of AI-assisted drug development and design.

Applying AI to drug development has the potential to bring benefits including reduced research costs, avoidance of human errors or the identification of areas of improvement¹¹. AI could, for example, detect cell changes that humans can't see under a microscope¹², or aid in understanding complex relationships between compounds, proteins, genes and diseases¹³.

The speedy analysis of massive amounts of data could also potentially help get drugs to market quicker¹⁴. This was given global prominence by Pfizer during the Covid-19 pandemic, when the company utilized an AI tool to speed up clinical trials of the vaccine¹⁵. Takeda Pharmaceutical Co, meanwhile, recently purchased an experimental psoriasis drug for \$4 billion from a start-up¹⁶ after the drug was selected for development in just six months with the use of AI.

3. Improving the experience for patients and professionals

Over half of those surveyed in BSI's Trust in AI Poll said they support the use of AI tools to help them manage their care remotely, outside of a hospital setting. The Covid-19 pandemic increased the focus on remote healthcare models, such as platforms for automated appointment systems and healthcare apps¹⁷. AI can enhance these platforms even further. For example, patients can avoid long waiting times by making appointments and checking in through an app or website – one study found waiting times were reduced by around 12 minutes when automation was involved¹⁸.

By automating appointments and reducing complex paperwork, these AI-driven solutions could help to improve communication and save time for both patients and healthcare workers¹⁹. Automated chats can also allow patients to ask medical questions without having to call their doctor²⁰ – for example 3.1 million patients in the US have chatted to a doctor or nurse via the K Health platform. With real-time health monitoring, patients have the ability check on their condition through an app without having to visit a doctor. These applications have functionalities that can, for example, also alert a doctor if there are any sudden changes in a patient's vital signs.

52%



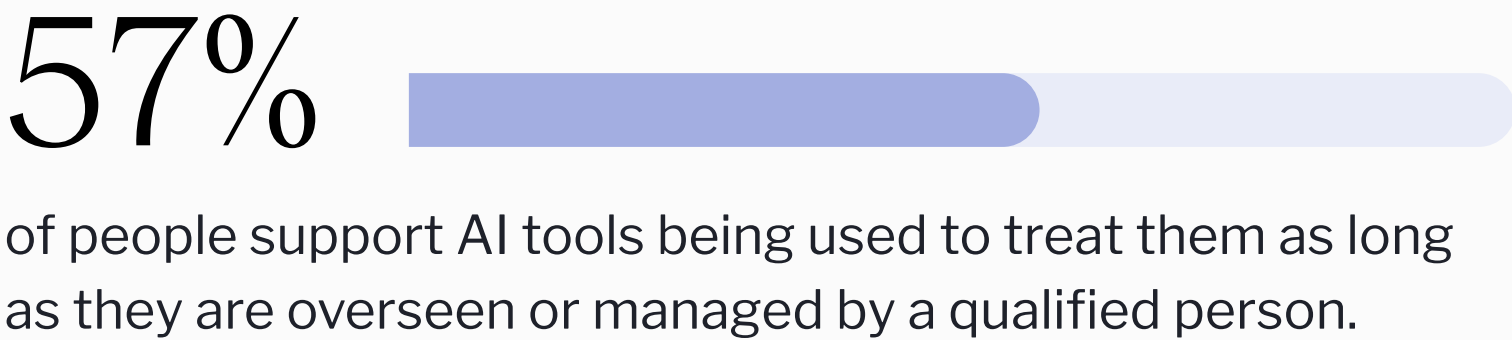
of people believe the use of AI can help to meet staffing needs across the healthcare sector.





4. Working alongside doctors

It's notable that nearly three fifths of people (57%) say they support AI tools being used to treat them as long as they are overseen or managed by a qualified person. AI can support doctors in decision-making by analyzing patient data, helping to speed up and improve the diagnostic process. This has the potential to improve patient safety by identifying risks early on so that the trajectory of the outcome can be changed for the better²¹. By combining AI-enabled decisions with expert judgment, patients can have peace of mind knowing the human touch is involved in the process, while they are still gaining trust in such technologies.

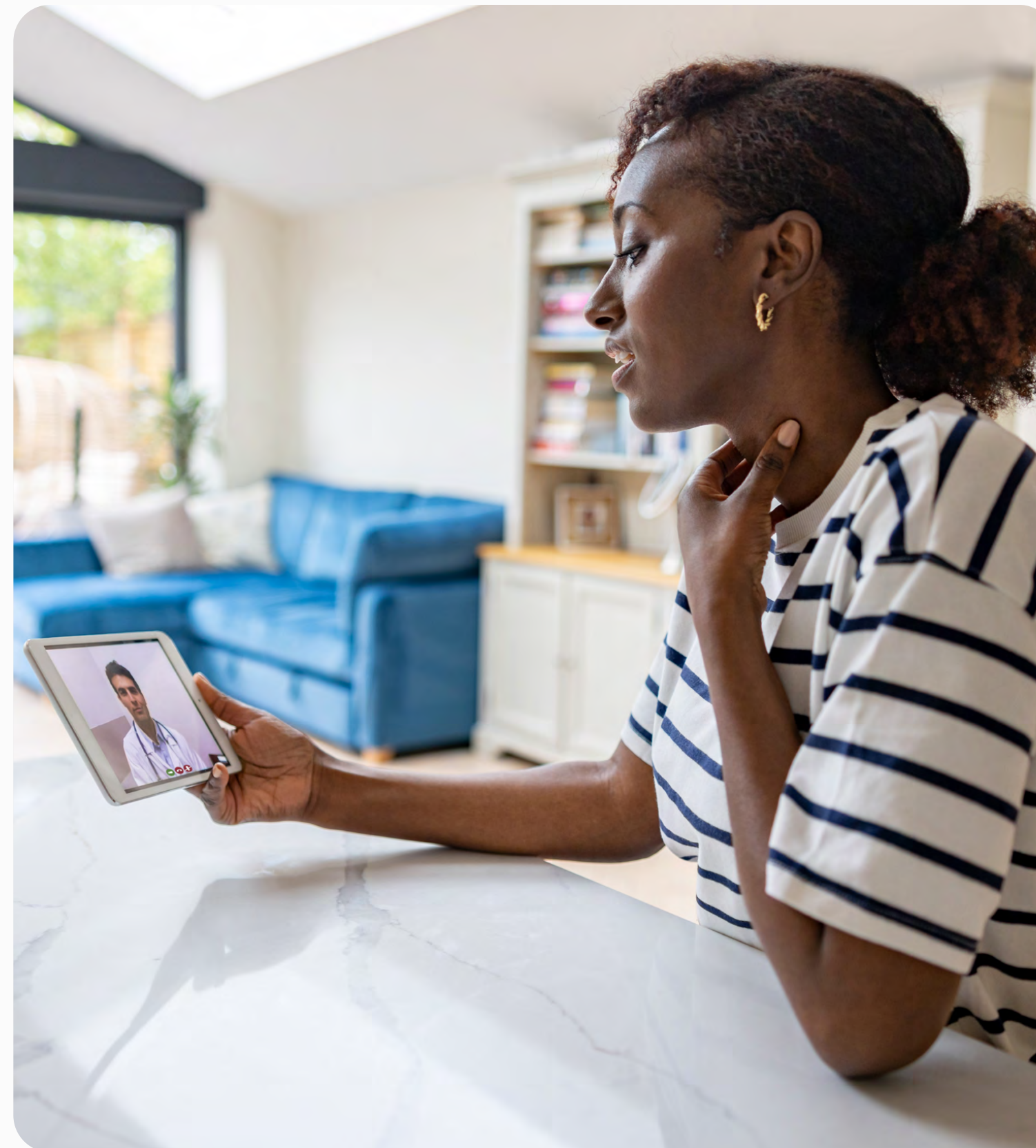


5. Accelerating medical innovation

Looking to 2050, three in ten (28%) said that a specific priority was for AI to make it easier for doctors to diagnose medical conditions. Already, AI can advance medical innovation while ensuring patient safety and quality of care, by supporting the development of new tools in clinical trials. From 3D-printed artificial limbs to surgical robots, the healthcare sector has already seen dozens of medical innovations thanks to the help of AI. One of the largest applications of AI has been in the invention and analysis of medical imaging – a market that is set to grow 34.3% by 2029²². AI has already innovated many areas of imaging, including lung nodule detection on CT scans and breast imaging – and the future possibilities are immense.

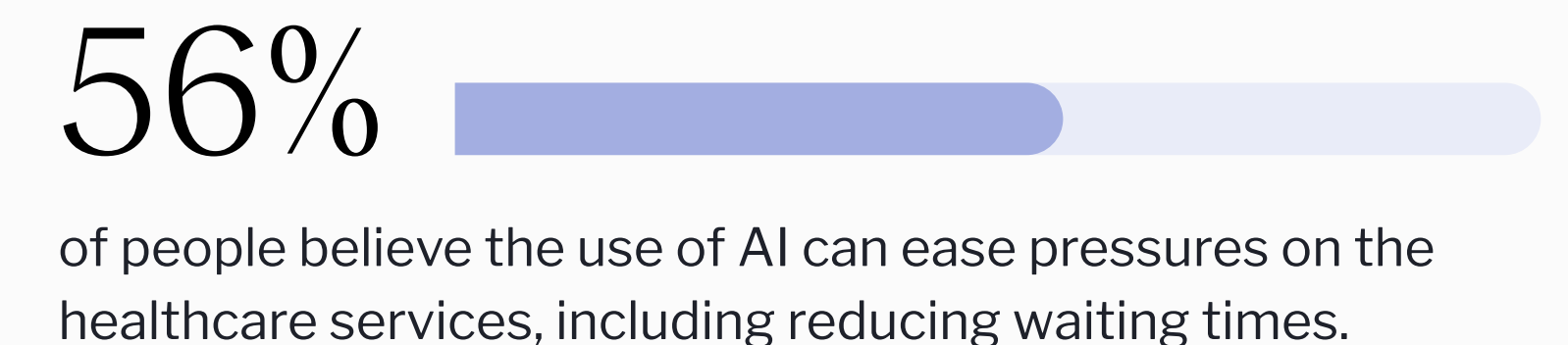
6. Personalized medical approaches

Every patient is different, but for stretched doctors and nurses, individualized care may not always be possible. Research²³ suggests AI could help with this, for example by predicting a patient's response to a given medicine. The system can compare the treatments, conditions, and the flow of courses by utilizing the data of different patients sharing similar complaints. It results in a customized medical approach offering a variety of treatment options considering the specific factors. Using AI in personalized medicine could allow for more effective treatments of different conditions. For example, in Europe a project is underway to apply existing genomic and clinical data to improve personalized medicine of pancreatic cancer²⁴.



7. Relieving pressure

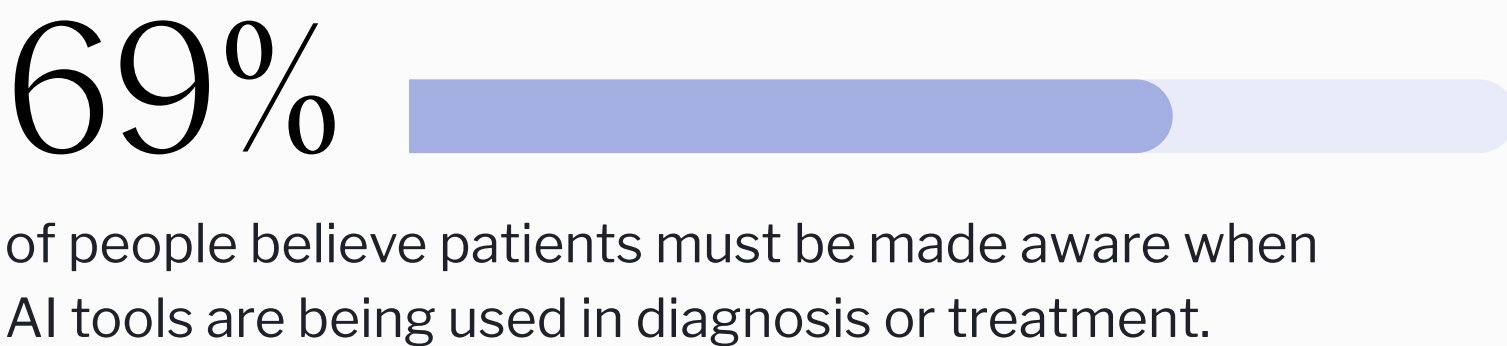
It is no secret that Covid-19 placed immense pressure on the healthcare sector²⁵. According to the WEF, “pressures on healthcare systems affected the mental health of healthcare workers across the globe, leading to significant burnout”. AI can't solve every issue, but 77% of healthcare workers said they believed if training happened, they would trust AI to do some or all of their jobs, including the most menial tasks – which would, of course, free them up to deliver care to patients. In fact, within the sector there is high enthusiasm for AI, with 57% of healthcare professionals saying they believe AI could help to meet staffing needs across the healthcare sector, and 58% saying they believe it could ease pressures including reducing waiting times.



Looking to the future

Underpinning all this is trust. 55% said they support the use of AI tools to diagnose or treat them or a loved one provided there are strict safeguards to ensure ethical use of patient data in place, and seven in ten (69%) believe patients must be made aware when AI tools are being used in diagnosis or treatment. To realize the benefits presented by AI in healthcare, there is work to be done to build confidence amongst patients and clinicians that AI can be trusted to innovate, diagnose and treat, just as researchers and doctors do every day.

As set out above, from revolutionizing drug development to improving patient safety, we are starting to see instances of AI improving outcomes in healthcare globally. As deep learning and algorithms improve in the coming years, this is only set to continue. Combining the expertise of researchers and doctors and the data analysis skills of AI could pave the way for even more medical advancements, benefiting patients and all of us.



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Find out more

BSI in its role as the UK National Standards Body recently published a standard (BS 30440) to help increase confidence among clinicians, healthcare professionals and clinical providers that the tools they are using have been developed in a safe, effective and ethical way. Find out more [here](#).



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